Reactive and Functional Polymers Volume Four

Tomy J. Gutiérrez Editors

# Reactive and Functional Polymers Volume Four

Surface, Interface, Biodegradability, Compostability and Recycling



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I would like to dedicate this book:

To my God (Father, Son and Holy Spirit), to the Virgin Mary and to my Guardian Angel, Its energy stimulates me to enjoy the landscape we call life and its peace encourages me to always continue towards the future, a place where we will all go and each one will be under the law of the creative father. To my Mother (Dr. Mirian Arminda Carmona Rodríguez). For forming my character and attitude towards life. To my Grandmother (Mrs. Arminda Teresa Rodríguez Romero), A person who unfortunately left before this world's time, but I am sure that she is up watching me and supporting me in all facets

of my life. You are in my most beautiful memories.

To my firstborn daughter (Miranda V. Gutiérrez),

*I will give you a lot of love!!! C*. *To all anonymous people, Those who give me their love, friendship, patience and support in various situations.*  To Venezuela and Argentina, The first for giving me my academic and professional training, and the second for welcoming me with love and friendship before the dictatorship that my country (Venezuela) is experiencing today.

Tomy J. Gutiérrez, Ph.D. Editor

### Preface

Reactive and functional polymers are essentially linked to the chemistry of polymers and their applications. The multiple tasks that they have accomplished in our recent history, and how they will help new advances in different crucial fields are indisputable. Volume 4 has been focused on surface reactions, interfacial interactions and reactive processes for recycling polymers and their biodegradability and compostability. I appreciate the valuable contribution of each of the contributing authors to this book from nine different countries.

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#### **About the Editor**



**Tomy J. Gutiérrez** received his degrees in Chemistry (Geochemical Option) and in Education (Chemical Mention) from the Central University of Venezuela (UCV) in December 2007 and July 2008, respectively. He completed his specialization in International Negotiation of Hydrocarbons from the National Polytechnic Experimental University of the National Armed Force (UNEFA), Venezuela, in July 2011, and his Master's and PhD degrees in Food Science and Technology in October 2013 and April 2015, respectively, both from the UCV. He has also PhD studies in Metallurgy and Materials Science from the UCV and

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